TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : **CP-2017-05-11-04** **Date: 13-05-17**

Customer : Assistant Executive Engineer, Project Division, BBMP, Bangalore.

Address : Project Division, BBMP, Bangalore.

Project Name : Providing children play equipment and open gym equipment in Yelahanka New Town park at Judicial layout in Ward No.04.

Agency : Technical Manager (West), KRIDL, Bangalore.

Customer's Reference : EE(Project)/Ynk Zone/WO/08/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 11-05-17

Sample ID No : 2017-05-11-04/01

Sample Type : Birla Super 53grade

Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 (Part 1,2 3,4,5, 6,11):1988
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6

Date of test : 12-05-17

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.55%	–
2	Finess by Air permeablity method (m^2/kg, Min)	288.3m^2/kg	225m^2/kg, Min
3	Density (gm/cc)	3.22	–
4	Standard Consistency (%)	28.5%	Not specified
5	Initial Setting time	215 minutes	Not less than 30 minutes
6	Final Setting time	325 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	2.0mm	Not more than 10 mm

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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****End of Report****

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-05-11-04** **Date: 09-06-17**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Providing children play equipment and open gym equipment in Yelahanka New Town park at Judicial layout in Ward No.04.
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/Ynk Zone/WO/08/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	11-05-17
Sample ID No	:	2017-05-11-04/01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	12-05-17

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	27.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	38.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	55.5N/mm^2	Not less than 53 N/mm^2

Note:

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-05-11-04** **Date: 15-05-17**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Providing children play equipment and open gym equipment in Yelahanka New Town park at Judicial layout in Ward No.04.
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/Ynk Zone/WO/08/2017-18
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	11-05-17
Sample ID No	:	2017-05-11-04-02(a)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	11-05-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	810	810	5.4	94.6	90-100
3	20 mm	7265	8075	53.8	46.2	30-70
4	10 mm	4311	12386	82.6	17.4	10-35
5	4.75 mm	2354	14740	98.3	1.7	0-5
6	Pan	260	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-05-11-04** **Date: 15-05-17**

Sample ID No : 2017-05-11-04-02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	**10.8**	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	**10.1**	
3	Specific Gravity	**2.59**	_
4	Bulk Density(Loose) (Kg/l)	**1.47**	_
5	Bulk Density(Compacted) (Kg/l)	**1.55**	_
6	Water Absorption(%)	**0.27**	_

Note:

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Bangalore

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-05-11-04** **Date: 15-05-17**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Providing children play equipment and open gym equipment in Yelahanka New Town park at Judicial layout in Ward No.04.
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Customer Reference	:	EE(Project)/Ynk Zone/WO/08/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	11-05-17
Sample ID No	:	2017-05-11-04-02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	11-05-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	168	168	3.4	96.6	90-100
3	10 mm	2543	2711	54.2	45.8	25-55
4	4.75 mm	2105	4816	96.3	3.7	0-10
5	Pan	184	5000	100	0	-

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-05-11-04** **Date: 15-05-17**

Sample ID No : 2017-05-11-04-02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.6	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.3	
3	Specific Gravity	2.65	–
4	Bulk Density(Loose) (Kg/l)	1.48	–
5	Bulk Density(Compacted) (Kg/l)	1.56	–
6	Water Absorption(%)	0.23	–
7	Aggregate crushing Value(%)	22.2	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	21.5	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF FINE AGGREGATE

Lab ID	:	**CP-2017-05-11-04** **Date: 15-05-17**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Providing children play equipment and open gym equipment in Yelahanka New Town park at Judicial layout in Ward No.04.
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/Ynk Zone/WO/08/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	11-05-17
Sample ID No	:	2017-05-11-04-03
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	11-05-17
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	34	34	3.4	96.6	90-100	90-100	90-100	95-100
3	2.36 mm	38	72	7.2	92.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	311	31.1	68.9	30-70	55-90	75-100	90-100
5	600 micron	337	648	64.8	35.2	15-34	35-59	60-79	80-100
6	300 micron	167	815	81.5	18.5	5-20	8-30	12-40	15-50
7	150 micron	103	918	91.8	8.2	0-10	0-10	0-10	0-15
8	Pan	82	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-05-11-04** **Date: 15-05-17**

Sample ID No : 2017-05-11-04-03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	2.48	_
2	Specific Gravity	2.61	_
3	Material finer than 75 micron(%)	3.0	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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Quality Manager

****End of Report****

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-05-20-08** **Date: 23/05/2017**

Customer : Assistant Executive Engineer, Project Division, BBMP, Bangalore.

Address : Project Division, BBMP, Bangalore.

Project Name : Providing children play equipment and open gym equipment in Yelahanka New Town park at Judicial layout in Ward No.04.

Agency : Technical Manager (West), KRIDL, Bangalore.

Customer's Reference : EE(Project)/Ynk Zone/WO/08/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 20-05-17

Sample ID No : 2017-05-20-08-01

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 23/05/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M20	16/05/2017	23/05/2017	151.00 X 149.29 X 151.09	22543	8.196	378.7	16.8	17.2
2	PCC	M20	16/05/2017	23/05/2017	150.29 X 150.83 X 150.22	22668	8.172	394.4	17.4	
3	PCC	M20	16/05/2017	23/05/2017	150.27 X 150.28 X 150.27	22583	8.175	390.7	17.3	

Note:

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-05-20-08** **Date: 13/06/2017**

Customer : Assistant Executive Engineer, Project Division, BBMP, Bangalore.

Address : Project Division, BBMP, Bangalore.

Project Name : Providing children play equipment and open gym equipment in Yelahanka New Town park at Judicial layout in Ward No.04.

Agency : Technical Manager (West), KRIDL, Bangalore.

Customer's Reference : EE(Project)/Ynk Zone/WO/08/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 20-05-17

Sample ID No : 2017-05-20-08-02

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 13/06/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M20	16/05/2017	13/06/2017	149.68 X 150.28 X 150.28	22494	8.118	501.6	22.3	21.9
2	PCC	M20	16/05/2017	13/06/2017	150.19 X 151.02 X 150.97	22682	8.169	501.3	22.1	
3	PCC	M20	16/05/2017	13/06/2017	150.22 X 149.27 X 150.98	22423	8.183	479.9	21.4	

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CEMENT CONCRETE FLOORING TILES

Lab ID	:	**CP-2017-05-15-01**	**Date: 18-05-17**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.	
Address	:	Project Division, BBMP, Bangalore.	
Project Name	:	Providing children play equipment and open gym equipment in Yelahanka New Town park at Judicial layout in Ward No.04.	
Agency	:	Technical Manager (West), KRIDL, Bangalore.	
Customer Reference	:	EE(Project)/Ynk Zone/WO/08/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	15-05-17	
Sample ID No	:	2017-05-15-01-02	
Sample Type/ Size	:	Pre-Polished Designer Cement Concrete Tiles	
Reference to BIS codes	:	IS 1237:2012	
Date of test	:	15-05-17	

1.Wet Transverse Strength

Sl.No.	Dimension (mm)			Wet Transverse Strength	Average	Requirement as per IS:1237-2012
	L	B	T	(N/mm^2)	(N/mm^2)	
1	400	400	25.14	7.54	7.41	The average wet transverse strength shall not be less than $3N/mm^2$.
2	399	400	24.98	6.98		
3	400	400	25.47	7.84		
4	400	401	25.18	7.64		
5	400	399	25.22	7.15		
6	400	400	25.08	7.28		

2. Water Absorption

Sl.No.	Dimension (mm)			Water Absorption	Average	Requirement as per IS:1237-2012
	L	B	T	(%)	(%)	
1	399	400	25.08	2.65	2.79	The average percentage of water absorption shall not exceed 10.
2	400	400	25.02	2.11		
3	401	399	25.18	3.08		
4	400	400	25.17	3.45		
5	399	400	25.08	2.98		
6	400	401	25.17	2.47		

Note:

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TEST REPORT OF CEMENT CONCRETE KERB STONE

Lab ID	:	**CP-2017-05-06-01** **Date: 10-05-17**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Providing children play equipment and open gym equipment in Yelahanka New Town park at Judicial layout in Ward No.04.
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/Ynk Zone/WO/08/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-05-17
Sample ID No	:	2017-05-06-01-01
Sample Type /Size	:	CC Kerb Stone/ 450*165*400mm
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test	:	06/05/2017

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	Kg	(Sq.mm)	(KN)	(N/mm2)	(N/mm2)	(N/mm2)
1	A	100.17	165.49	2.958	7879	147.5	18.7	17.4	21.8
2	B	100.19	165.51	2.849	7882	139.2	17.7	17.7	22.1
3	C	100.21	165.48	2.795	7886	143.1	18.1	18.1	22.7

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